



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/434,391	05/15/2006	Mark Ulrich	20084/SWA (ITWO:0125)	5707
52145	7590	02/01/2013	EXAMINER	
FLETCHER YODER (ILLINOIS TOOL WORKS INC.)			EVANS, GEOFFREY S	
P.O. BOX 692289			ART UNIT	PAPER NUMBER
HOUSTON, TX 77269-2289			3742	
			MAIL DATE	DELIVERY MODE
			02/01/2013	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

*Ex parte* MARK ULRICH, SEAN MORAN, and PAUL LEITERMANN

---

Appeal 2010-010922  
Application 11/434,391  
Technology Center 3700

---

Before JOHN C. KERINS, PHILLIP J. KAUFFMAN, and  
MICHAEL C. ASTORINO, *Administrative Patent Judges*.

ASTORINO, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134 from the Examiner's decision finally rejecting claims 1, 2, 4, and 6-22. Claim 3 has been cancelled and claim 5 has been objected to as being dependent upon a rejected base claim (Ans. 2, 7). We have jurisdiction over the appeal under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

*Rejections*

The following Examiner's rejections are before us for review.

Claims 21 and 22 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

Claims 21 and 22 are rejected under 35 U.S.C. § 102(b) as anticipated by Citrich (US 2004/0050826 A1, pub. Mar. 18, 2004).

Claims 21 and 22 are rejected under 35 U.S.C. § 102(b) as anticipated by Willerhausen (US 2004/0056005 A1, pub. Mar. 25, 2004).

Claims 1, 2, 4, and 6-20 are rejected under 35 U.S.C. § 103(a) as unpatentable over Hiroshi (JP 07-136766A, pub. May 30, 1995).

*Claimed Subject Matter*

Claims 1, 11, 15, and 21 are the independent claims on appeal. Claim 21, reproduced below, is illustrative of the subject matter on appeal.

21. A device, comprising:  
a stud welding system, comprising:  
a stud-welding gun;  
a workpiece sensor coupled to the stud-welding gun, wherein the workpiece sensor does not include an optical sensor.

OPINION

*Written Description*

Claim 21 is directed to a device including a stud welding system having a workpiece sensor that "does not include an optical sensor." App. Br., Claims Appendix. The Examiner rejects claim 21 as failing to comply with the written description requirement of Section 112, first paragraph, because "[t]here is no disclosure in the originally filed application, including the claims, that the workpiece sensor does not include an optical sensor."

Ans. 3. In response to the Appellants' contention to the contrary, the Examiner determines that "[m]erely because the [S]pecification does not mention an optical sensor does not preclude an optical sensor from being present." Ans. 5.

The Specification, however, states that "the workpiece sensor 68 may sense other parameters indicative of proximity of the workpiece 16 to the stud 26. For example, the workpiece sensor 68 *may* include an *optical sensor*, a capacitance sensor, an eddy current sensor, a metal detector, *and/or* a contact sensor." Spec. 8, para. [0029] (italics added). *See* App. Br. 8. As such, the Appellants correctly contend that the Specification recites the use of an optical detector as an alternative and further, correctly assert that when alternative elements are positively recited in the Specification they may be explicitly excluded in the claims (*see In re Johnson*, 558 F.2d 1008, 1019 (CCPA 1977)). App. Br. 8.

Thus, the rejection of claim 21, and its dependent claim 22, under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement is not sustained.

*Anticipation by Citrich*

The Examiner finds that Citrich "discloses a stud welding gun (element 1, see figure 1) and a workpiece sensor that is a contact sensor (unidentified element, see paragraph 50) that detects current flow to detect contact." Ans. 3-4.

The Appellants contend that Citrich does not disclose "a workpiece sensor coupled to the stud-welding gun" or that the "workpiece sensor does not include an optical sensor," as recited in claim 21. App. Br. 9. The Appellants assert that "Citrich appears to disclose a circuit completed by

contact between a stud and a workpiece, but fails to disclose a *workpiece sensor*.” *Id.* Further, the Appellants assert that the Examiner’s finding of an “unidentified element” cited in paragraph 50 does not correspond to the workpiece sensor as required in claim 21, but “is more appropriately read as an absence in the disclosure of Citrich of the recited ‘workpiece sensor’ of independent claim 21.” Reply Br. 2. However, the Appellants’ arguments are not persuasive in light of the Examiner’s explanation that Citrich discloses in paragraph 50 “a sensor measuring a voltage between the workpiece 17 and the stud holding device” because the “sensor measures a voltage relative to the workpiece it is a ‘workpiece sensor’ as well as a voltage sensor.” Ans. 5.

The Appellants also contend that Citrich does not disclose that “the workpiece sensor does not include an optical sensor” as recited in claim 21. App. Br. 9. However, the Appellants have not pointed out where Citrich discloses the use of an optical sensor as part of the workpiece sensor as identified by the Examiner in paragraph 50. *See* Ans. 5. As such the Appellants’ contention is not persuasive.

Thus, the rejection of claim 21 as anticipated by Citrich is sustained. Claim 22 depends from claim 21 and is not argued separately, and as such, the rejection of claim 22 is also sustained.

*Anticipation by Willerhausen*

Claim 21 calls for a device including a stud welding system having a stud welding gun and “a workpiece sensor coupled to the stud-welding gun, wherein the workpiece sensor does not include an optical sensor.” *See* App. Br., Claims Appendix. The Examiner finds that Willerhasusen’s welding head 28 and analysis unit 78 correspond to the stud welding gun and

workpiece sensor, as called for in claim 21. Ans. 4, 5-6.

The Appellants contend that Willerhausen does not disclose a workpiece sensor coupled to the stud gun. App. Br. 10. Further, the Appellants assert that Willerhausen's analysis unit 78 is separate and distinct from the disclosed welding head 28 and as such, "cannot be read as a workpiece sensor 'coupled to the stud welding gun' as recited in independent claim 21." Reply Br. 3. However, the Appellants' Specification describes that the "workpiece sensor [may be] disposed in one or more of a variety of locations, such as locations 17, 19, 21 and/or 23" (Spec. 3, para. [0013]). See Ans. 5. Figure 1 depicts location 19 adjacent to the stud welding gun 14 and locations 17, 21, and 23 are depicted at separate and distinct locations from stud welding gun 14. Nonetheless, it is understood that when the workpiece sensor is positioned at locations 17, 21, or 23 the workpiece sensor is still coupled to the stud welding gun 14. For example, if a workpiece sensor was situated at location 17 it would be communicatively coupled to the stud welding gun 14. See also Spec. 14 (claim 1 as filed and on appeal recites "a workpiece sensor communicatively coupled to the stud welding power controller"). As such, the broadest reasonable interpretation in light of the Specification of the term "coupled" in claim 21 includes the stud welding gun and the workpiece sensor being at separate and distinct locations. In the case of Willerhausen, analysis unit 78 is communicatively coupled to welding head 28. Ans. 4, 5-6; Willerhausen, para. [0036].

The Appellants also contend that since Willerhausen does not disclose a workpiece sensor "Willerhausen necessarily cannot be read as disclosing that the workpiece sensor *does not include an optical sensor.*" App. Br. 10.

As discussed above, Willerhausen does disclose a workpiece sensor, and since the Appellants do not point out how Willerhausen discloses the use of an optical sensor as part of the analysis unit 78 their contention is unpersuasive. *See* Ans. 5.

Thus, the rejection of claim 21 as anticipated by Willerhausen is sustained. Claim 22 depends from claim 21 and is not argued separately, and as such, the rejection of claim 22 is also sustained.

*Obviousness over Hiroshi*

*Claims 1, 2, 4 and 6-10*

Independent claim 1 calls for a workpiece sensor, or a stud welding power controller, or a combination thereof, configured to measure a feedback parameter. *See* App. Br., Claims Appendix. The Examiner finds that Hiroshi detects contact between the stud bar 3 and the relay 19 and that the contact causes the power supply 8 to be turned on. *See* Ans. 6. Based on this the Examiner explains that “broadly speaking the detection of the current flow caused by the contact of the stud bar[ ](element 3) to the workpiece (element M) in Hiroshi . . . causes a ‘feedback parameter’ that turns on the power supply to commence welding.” *Id.* However, the existence of two operating states (“on” or “off”) does not include a measurement and as such, does not correspond to a configuration to measure a feedback parameter as called for in claim 1. App. Br. 13, Reply Br. 4.

Thus, the Examiner’s rejection of independent claim 1 cannot be sustained. Additionally, claims 2, 4, and 6-10 depend either directly or indirectly from claim 1 and as such, the rejection of claims 2, 4, and 6-10 cannot be sustained.

*Claims 11-14*

Independent claim 11 is directed to a “welding device” including a “stud welding controller responsive to a signal indicative of generally no contact between a welding stud and a workpiece.” App. Br., Claims Appendix. The Appellants contend that Hiroshi “is silent regarding a no contact state, and clearly lacks any way to *signal* a state of *no contact*.” App. Br. 14. In response, the Examiner comments that “the absence of signal from the circuit is effectively a signal of non-contact.” Ans. 6-7. However, claim 11 calls for a controller to be responsive to a signal and the lack of a signal does not correspond to a signal. *See* Reply Br. 5.

Thus, the Examiner’s rejection of independent claim 11 cannot be sustained. Additionally, dependent claims 12-14 depend from claim 11 and as such, the rejection of claims 12-14 cannot be sustained.

*Claims 15-17 and 20*

The entirety of independent claim 15 recites “[a] method, comprising: providing a stud welding power control unit with a stand-by open circuit voltage less than a welding voltage when energized.” App. Br., Claims Appendix.<sup>1</sup>

The Examiner finds that Hiroshi discloses “a controller 11 communicatively coupled to the power supply via relay contacts 19-1” and “supplying an open circuit test voltage (see power source 16),” but not that the open circuit test voltage is lower than the welding power supply voltage.

---

<sup>1</sup> Independent claim 15 is distinguishable from independent claim 1, *inter alia*, in that claim 1 recites “an open circuit test voltage of *substantially less* than a welding voltage to the stud” whereas claim 15 recites “open circuit voltage *less* than a welding voltage when energized.” App. Br., Claims Appendix.

Ans. 4. The Examiner explains “that if the open circuit test voltage is equal to or greater than the welding power supply voltage undesired arcing would occur during the contact sensing phase.” *Id.* The Examiner concludes that “it would have been obvious to adapt . . . [Hiroshi’s device] with an open circuit test voltage that is lower than the welding power supply voltage to produce the predictable result of no undesired arcing of the surface by the contact sensing apparatus.” *Id.*

The Appellants contend that since Hiroshi lacks disclosure of having an open circuit test voltage lower than the welding power supply voltage, the Examiner’s rejection “appears to rely on Official Notice.” App. Br. 12. The Appellants traverse the Examiner’s use of Official Notice and requested objective evidence in support of the missing claim features. App. Br. 12. *See also* Pre-App. Br. 2.<sup>2</sup> However, to adequately traverse the Examiner’s use of Official Notice the Appellants must point out the errors in the Examiner’s finding by pointing out why the fact asserted by the Examiner is not considered common knowledge or well-known in the art. *See In re Lundberg*, 244 F.2d 543, 551 (CCPA 1957); *In re Boon*, 439 F.2d 724, 727 (CCPA 1971); *In re Fox*, 471 F.2d 1405, 1406-07 (CCPA 1973) (affirming rejection under 35 U.S.C. § 103 without citation of any prior art based on facts that were unchallenged by the appellant). In this case, the Appellants do not point out why the Examiner’s fact is not considered common knowledge or well-known in the art and as such, the Appellants’ traversal is inadequate.

---

<sup>2</sup> “Pre-App. Br.” refers to the “Pre-Appeal Brief Request for Review” filed August 31, 2009.

The Appellants also assert that Hiroshi's device "aims at preventing the start mistake by the poor contact to the welded material of a stud rod in stud welding" and point to their own Specification as providing "contrastingly different goals and principles of operation." App. Br. 12-13. *See* Hiroshi, para. [0005]<sup>3</sup>. However, merely because the Appellants' Specification provides a contrasting goal or principle of operation does not explain error in the Examiner's reasoning that having an open circuit test voltage lower than the welding power supply voltage in Hiroshi's device would prevent undesired arcing. *See* Ans. 4.

Additionally, in the Reply Brief, the Appellants assert that "the Examiner appears to effectively suggest[] that the recitations are somehow obvious in view of 'common sense'" which "is an inappropriate standard [for obviousness]." Reply Br. 4. The Appellants' assertion is in response to the following Examiner's statement; "[f]urthermore, common sense would motivate one to use the lowest possible open circuit test voltage that still results in accurate measurement of contact in order to save energy." Ans. 6. The Examiner's position regarding "common sense" is directed to claim 1 and the term "substantially less" appearing therein, and not to claim 15. As such, the Appellants' argument is not germane to claim 15.

Thus, the rejection of claim 15 as unpatentable over Hiroshi is sustained. The Appellants do not present separate arguments for claims 16, 17, or 20, which depend from claim 15, and as such, the rejection of these claims is also sustained.

---

<sup>3</sup> Citations to "Hiroshi" are directed to the machine translation, dated Sept. 30, 2007.

*Claims 18 and 19*

Claim 18 recites “[t]he method of claim 15, wherein providing the stud welding power control unit comprises providing a stud welding power control unit with a stand-by open circuit voltage less than 35 volts when energized.” App. Br., Claims Appendix. The Examiner concludes that having a voltage of less than 35 volts “would be reached by experimentation to achieve the lowest effective voltage for determining contact between the workpiece and the welding gun.” Ans. 7. Claim 19 recites “[t]he method of claim 15, wherein providing the stud welding power control unit comprises providing a stud welding power control unit with a stand-by test current of less than 100 milliamps.” App. Br., Claims Appendix. The Examiner concludes that “one of ordinary skill in the art would determine that the minimum current flow for correctly determining the current flow for determining contact.” Ans. 7.

The Appellants point out that the Examiner failed to cite any portion of Hiroshi that provides a stud welding power control unit with “a stand-by open circuit voltage less than 35 volts when energized,” as recited in claim 18, or “a stand-by test current range of less than 100 milliamps,” as recited in claim 19. Reply Br. 6-7. The Appellants contend for both claims that “[a] vague suggestion that experimentation would yield the claimed range is insufficient to substantiate a Section 103 rejection.” Reply Br. 6-7. We agree. The Examiner has not cogently reasoned why the modification of Hiroshi would have resulted in “a stand-by open circuit voltage less than 35 volts when energized,” or “a stand-by test current range of less than 100 milliamps,” or applied the holding of any relevant case law to the facts of this case. *See generally* MPEP §§ 2144.05(i), 2144.05(ii).

Additionally, as discussed above, the Examiner states that “common sense would motivate one to use the lowest possible open circuit test voltage that still results in accurate measurement of contact in order to save energy.” Ans. 6. However, the Examiner does not cogently explain why the lowest possible open circuit test voltage that still results in accurate measurement of contact in order to save energy is “less than 35 volts when energized” as recited in claim 18.

Thus, for the foregoing reasons the rejection of claims 18 and 19 as unpatentable over Hiroshi is not sustained.

#### DECISION

We REVERSE the rejections of: claims 21 and 22 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement; and, claims 1, 2, 4, 6-14, 18, and 19 under 35 U.S.C. § 103(a) as unpatentable over Hiroshi.

We AFFIRM the rejections of: claims 21 and 22 under 35 U.S.C. § 102(b) as anticipated by Citrich; claims 21 and 22 under 35 U.S.C. § 102(b) as anticipated by Willerhausen; and, claims 15-17 and 20 under 35 U.S.C. § 103(a) as unpatentable over Hiroshi.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

**AFFIRMED-IN-PART**

mls